

### ABSTRACT

An automotive air conditioning refrigerant recycling system incorporates an improved upstream oil separator that removes virtually all contaminating lubricants from a refrigerant stream before the refrigerant is delivered to sensitive downstream components of the recycling system. The oil separator includes a vaporizing chamber wherein refrigerant vaporizes while dissolved lubricants precipitate and a mist arrestor for trapping remaining lubricant entrained in the refrigerant vapor. The oil separator also may incorporate a temperature controller for controlling the temperature of the refrigerant stream in order to separate other contaminants such as hexane and hexane derivatives, Menthol Chloride, Isoparafins and other contaminants from the stream. A bi-directional valve allows refrigerant to move through the chamber in one direction and bypass the chamber in the opposite direction.